



Mountain Lions IN MISSOURI



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Mountain Lions in Missouri

History

The mountain lion (*Puma concolor*)—also known as puma, cougar, panther, painter, and catamount—was once common throughout the United States. In fact, at the time of European settlement, it had the widest distribution of any mammal and occurred throughout North, Central, and South America. During the 19th century, unregulated hunting and constant persecution increasingly reduced its U.S. range, and by the early 1900s it had been virtually eliminated in the East and Midwest. The last known historic specimen in Missouri was killed in the Bootheel area in 1927. Mountain lions managed to hang on in the rugged terrain of the nation's West and Southwest, and in the 1970s, when changing attitudes revised their status from “vermin” to “valued mammal,” their numbers began to slowly increase.

Biology, Habits, and Behavior

Shy, secretive, and solitary, mountain lions tend to hunt and travel at night and are rarely seen, even in areas with established, reproducing populations. They are efficient predators that use surprise and speed—up to 40 mph for short distances—to ambush their prey, which are predominantly white-tailed deer and medium-sized wild mammals. They are capable of making a variety of sounds, but rarely do so. Mountain lions can travel long distances and have the largest home range, from 50 to 400 square miles, of any wild animal in North America.

Mountain lions have no definite breeding season. Young are born in any month of the year, but there is a peak in July. Typical litters of two to three kittens are born after an 82- to 96-day



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gestation period. At birth, the kittens are 12 inches long, blind, and weigh about a pound. At six to seven weeks they are 2.5 feet long and weigh nearly 10 pounds. They are weaned at three months, and at six months they weigh approximately 40 pounds and begin to hunt. They disperse (leave the family group and strike out on their own) at 18 to 24 months, and at 30 months they are considered adults. Adult males are about 6 feet long and average 180 pounds. Adult females are smaller, weighing up to 140 pounds. A healthy female usually produces one litter every two or three years.

Reappearance

Recently, mountain lions have been confirmed in a number of midwestern states, including Missouri. Researchers know that mountain lion populations in western states—such as Colorado, Montana, Nebraska, and South Dakota—are growing, and individuals from those areas are now making their way back into formerly occupied territory. Resident dominant males push young males out of their birth area by the time youngsters are 18 months old. These transient juveniles travel long distances in search of mates and territories of their own. DNA analysis has confirmed that mountain lions identified in Missouri have come from western states. Females typically do not make these long-distance dispersals but settle closer to where they were born. There is no evidence of an established breeding population of mountain lions in Missouri, although individual observations have been confirmed.

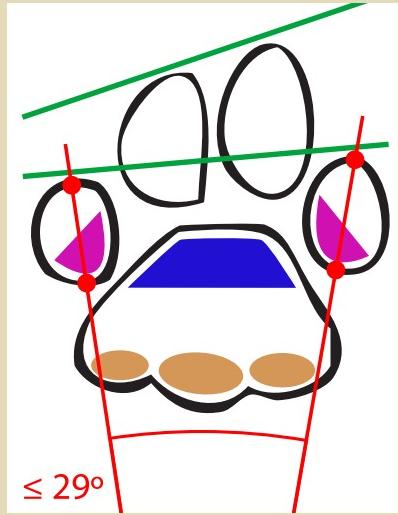
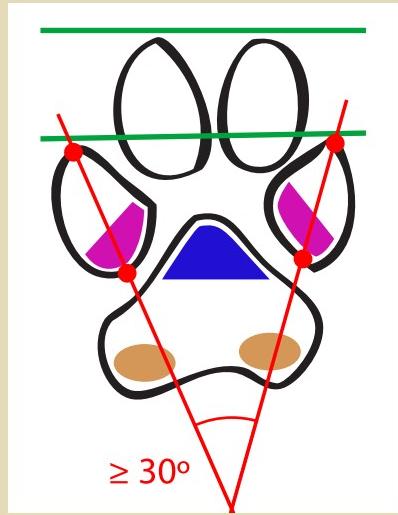
MDC's Lion Trackers

The Mountain Lion Response Team was formed in 1996 to investigate reports of mountain lion presence in Missouri. Team members receive special training and work with mountain lion experts throughout the country. As a result, the team brings a wealth of practical, hands-on experience when examining evidence such as tracks, hair, scat, prey remains, and photographs.

Evidence of Mountain Lions

Tracks and trail camera photos are the most common forms of evidence that are submitted. At first glance, dog and cat tracks may look similar, but they are, in fact, distinctly different. Dog tracks typically show claw marks, while cat tracks rarely do. Also, a cat's

Characteristics of Mountain Lion vs. Dog Tracks

Mountain Lion	Dog
	
	
TOE SYMMETRY Inner lead extends outer lead Inner lateral extends outer lateral	TOE SYMMETRY Even inner toes Even lateral toes
LATERAL TOE SHAPE Rounded inner edge	LATERAL TOE SHAPE Angular inner edge
FORE-EDGE HEEL SHAPE Bi-lobed (usually) or squared off	FORE-EDGE HEEL SHAPE Single-lobed
HIND-EDGE HEEL SHAPE Three even lobes	HIND-EDGE HEEL SHAPE Two outer lobes extend beyond center lobe (if center lobe exists)
ANGLE OF FORE-AFT AXIS ≤ 29 degrees	ANGLE OF FORE-AFT AXIS 95 percent: ≥ 30 degrees 5 percent: 25–29 degrees



These cutouts show that the mountain lion is significantly larger than both the bobcat and the common, domestic housecat.

This trail-cam photo taken in Nebraska shows the mountain lion's distinctive profile. Note the long, thick tail, stout legs and relatively small head.

heel pad has three lobes with two indentations, but a dog's has two lobes with no distinct indentation. Finally, the shape and placement of the toes, as well as the overall shape of the track, differ. If you have a pet dog and cat at home, look at their paws and the differences will be readily apparent.

All evidence received by the team receives close scrutiny. Sometimes the photo is clearly of an animal other than a mountain lion, such as a bobcat or coyote. Other times, because of poor lighting or distance, the team needs to take a closer look. In some instances the

team visits the site and uses life-sized cutouts to establish the animal's true size, and therefore, identity. Many photos—which show a cat's image, but lack an object to show scale—turn out to be of common house cats. If the photo is of a mountain lion, the team must determine if it was taken in Missouri. The team has verified that a number of mountain-lion-sighting photos attributed to Missouri were actually taken in other states.

The team also verifies mountain lion presence by examining prey remains. Mountain lions kill their prey—

mostly white-tailed deer—with an efficient, suffocating bite to the neck or throat, or by biting through the skull into the brain. Bobcats and coyotes also use suffocating bites, but coyotes sometimes chase their prey, biting at it to wear it down. Dogs are much less efficient and usually bite the face, neck, and ears while chasing prey, but also the hind legs, tail, sides, and shoulders, often leaving tooth marks that are mistaken as mountain lion claw marks. Also mistaken for claw marks are scratches on horses and cattle that dogs have chased into barbed-wire fences and other obstacles.

After the kill, mountain lions usually drag their prey to cover, then feed on the heart, liver, lungs, kidneys, and major muscle groups. They typically do not eat the stomach or intestines. After feeding, they cover the prey with debris and may return several times until it is completely consumed. In contrast, coyotes usually eat into the anus or abdominal area and consume the stomach, intestines, other organs, and meat. Dogs typically do not feed on their prey and may continue to chase and injure other animals.

Regardless of the type of evidence, the team updates the department website whenever they confirm a mountain lion's presence.

“Black Panthers”

The team sometimes receives reports of black panthers. No species of large black cat occurs in the United States. Only two species of large black cat are sometimes all black, or melanistic: the leopard (*Panthera pardus*), found in Africa and Asia, and the jaguar (*Panthera onca*), of South America, Central America and Mexico. Throughout the mountain lion's long history and extensive range, no black specimen has ever been documented. Consequently, such reports can only be cases of mistaken identity or an escaped exotic pet.

Mountain Lions and the Wildlife Code

The mountain lion, like all wildlife, is protected by the *Wildlife Code of Missouri* and may only be taken as provided by the *Code*. There are no hunting or trapping seasons for mountain lions, but the *Code* does specify that any mountain lion attacking or killing livestock or domestic animals, or threatening human safety, may be killed without prior authorization. Any mountain lion that is killed must be reported immediately to the department, and the intact carcass, including pelt, must be surrendered



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Mountain Lion Behavior and Suggested Human Response

Behavior/Activity	Meaning	Human Risk	Appropriate Human Response
More than 100 yards away and moving away.	Avoidance	Negligible	Keep children where they can be observed.
100–50 yards away; various positions and movements; attention away from people.	Indifference	Negligible	Remain calm; do not approach. Avoid rapid movements or running. Make your presence known then slowly back away/leave the area.
In a tree (including treed by dogs).	Avoidance	Minor/None	Leash dogs; move away from tree until out of sight and allow animal to escape.
100–50 yards away; various or changing positions; ears up; attention toward people and/or following people.	Curiosity	Slight for adults; Serious for unaccompanied children	Hold small children; keep older children close. Assume standing position; do not turn your back. Look for sticks, rocks, or other weapons and pick them up using an aggressive posture; do your best to appear large and threatening.
50–25 yards away; intense staring and hiding coupled with crouching and/or creeping toward people.	Considering/positioning for attack	Serious	Move slowly to place large objects such as trees or boulders between you and the animal, but do not lose sight of it. Make menacing sounds; throw things if animal is close enough to hit.
25 yards or closer; tail twitching; body and head low to ground; rear legs may be gently “pumping” or “treading” up and down.	Pre-attack/attack imminent	Extreme	Prepare to defend yourself using whatever weapons are available (including lethal). Pepper spray may be effective if animal is close and downwind. If animal attacks, fight back!

to the department within 24 hours. These carcasses provide the team with a wealth of valuable information.

It should be noted that merely seeing a mountain lion does not, in and of itself, necessarily constitute a safety threat. For example, a mountain lion in a tree poses very little—if any—danger. As is the case for all wildlife, mountain lions may not be killed indiscriminately.

A Threat to Humans?

Sightings are rare, and there have been few attacks on people throughout the established mountain lion range. There has never been an attack on a person in Missouri. In the unlikely event that you do encounter a mountain lion, you can take steps to minimize your risk, and how you react will largely determine the outcome of the situation. In most instances, making the animal aware of

your presence and providing it with an escape route is the appropriate course of action.

You Can Help

Because the mountain lion has long been absent from the Midwest, many Missourians are unfamiliar with its habits and behavior, which is why its reappearance has generated both interest and concern. One thing is certain: the Mountain Lion Response Team will continue to closely monitor the reappearance of mountain lions in our state and advise Missourians of all new developments. You can help by reporting any sightings or physical evidence to the nearest Department of Conservation office or directly to the Mountain Lion Response Team by sending an email to mountain.lion@mdc.mo.gov. ▲



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